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Commentary on Van Lange et al. - Stuck in the heat or stuck in the hierarchy? Power relations explain regional variations in violence

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Abstract:	We contend that an ecological account of violence and aggression requires consideration of societal and cultural settings. Focusing on hierarchical relations, we argue countries with higher (vs. lower) power distance are, on average, located closer to the equator, have more challenging climates (i.e., higher temperature; lower temperature variation) and a greater prevalence of violence and aggression (i.e., higher homicide rates).

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Stuck in the heat or stuck in the hierarchy? Power relations explain regional variations in violence

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ABSTRACT:

We contend that an ecological account of violence and aggression requires consideration of societal and cultural settings. Focusing on hierarchical relations, we argue countries with higher (vs. lower) power distance are, on average, located closer to the equator, have more challenging climates (i.e., higher temperature; lower temperature variation) and a greater prevalence of violence and aggression (i.e., higher homicide rates).

MAIN TEXT:

The CLASH model seeks to explain regional variations in violence and aggression by focusing on how individuals cope with environmental stressors irrespective of the wider social context (Van Lange, Rinderu, & Bushman, in press). This approach overlooks the fact that environmental challenges affect individuals' relations with others and the very fabric of society, creating variations in culture (e.g., Barkow, Tooby, & Cosmides, 1995).

In the present commentary, we focus on the role of societal structures that originate from the distribution of power and resources (material and social), which we argue contribute to regional variations in violence and aggression. In unequal and hierarchical societies, the less privileged are inclined to adopt a shorter life strategy (e.g., Griskevicius, Tybur, Delton, & Robertson, 2011; A. Moon & Chen, 2014), are more oriented towards the present moment (e.g., Weick & Guinote, 2010; Magee & Smith, 2013) and are more impulsive (e.g., Wood, 1998). Thus, contrary to Van Lange and colleagues' assertion that "[cultural] explanations focus more on behavioral patterns than on underlying mechanisms" (p.14), there are well-defined routes through which societal and cultural variables can impact violence and aggression. We agree with the authors that 'life strategy' (LS), 'time orientation' (TO), and 'self-control' (SC) can contribute to regional variations in violence and aggression, but we question whether the physical environment (incl. temperature and temperature variation) contributes to differences in LS, TO, and SC independently of cultural and societal settings.

A consideration of societal and cultural variables enables us to move beyond intraindividual variables (i.e., LS, TO, and SC) to consider variables operating at the inter-individual and group level. In hierarchical societies factors such as expectations of deference from those of lower rank (e.g., Tyler, Lind, & Huo, 2000) and the need to demonstrate one's worth (e.g., Mendoza-

Denton, Downey, Purdie, Davis, & Pietrzak, 2002) are chief concerns and can exacerbate conflicts. An imbalance in power can also trigger retaliatory aggression in chronically powerless individuals when the opportunity arises (Strelan, Weick, & Vasiljevic, 2013). All of these factors operate in the context of cultural norms that can further fuel abuse, in particular down-ward abuse, in hierarchical settings (cf. Pearson, Andersson, & Porath, 2000). This, combined with the fact that the importance of the social context increases to the extent that people live in harsher and more unequal circumstances (e.g., Bianchi & Vohs, 2016; Walasek & Brown, 2015), leads us to believe that the focus on intra-individual variables (LS, TO, and SC) paints an incomplete picture.

Our claim that societal and cultural variables are important for understanding variations in levels of violence and aggression is bolstered by the observation that countries with some of the highest homicide rates – including Honduras, Venezuela, Guatemala, Mexico and Panama – are not only characterised by high temperatures and low seasonal variations, but are also in the upper quartile of Hofstede's power distance index, which captures the extent to which hierarchies are embedded in society and inequalities are accepted as there to stay (Hofstede, 1980). Conversely, some of the lowest homicide rates can be observed in countries such as Iceland, Switzerland, Sweden, and Denmark – countries with low temperatures and high seasonal variation that are also characterised by low power distance. Bergeron and Schneider (2005) established an association between power distance and cross-national differences in aggression, but their analysis did not include homicides and other extreme violence, nor did it examine climatological variables. In the present commentary, we sought to fill this gap, also examining for the first time the link between power distance and climate. As shown in Table 1, we fournd that power distance is associated with higher homicide rates across countries. Crucially, power distance increases with greater proximity to the equator, high average

annual temperature, and lower seasonal temperature variation (the latter does not hold for Europe). These data bolster our proposition that social structures and the distribution of power can contribute to geographic and climatological variations in violence.

Table 1: Associations of power distance with climate and violence (homicide rates) in different geographic regions

	Correlations with Power Distance (country level)								
	Americas			Europe			Worldwide		
	τ	*n*	*p*	τ	*n*	*p*	τ	*n*	*p*
Distance from equator	-.412	18	.018	-.404	30	.002	-.330	84	<.001
Annual temperature[1]	.328	20	.044	.282	33	.022	.337	96	<.001
Temperature variation[2]	-.286	20	.079	.213	33	.082	-.126	96	.072
Homicide rate	.317	20	.051	.310	34	.012	.193	101	.005

NB: τ = Kendall's Tau-b correlation coefficient; *n* = number of countries. Data sources: power distance (Hofstede, n.d.); distance from equator (Laitin, Moortgat, & Robinson, 2012); annual temperature and temperature variation (World Bank, 2011); homicide rates (UNODC, 2013). [1]Arithmetric mean and [2]standard deviation of average monthly temperatures spanning 1961-1999.

We posit that the association between power distance and violence is mediated by individual-level variables such as LS, TO, and SC, as well as inter-personal and group-level variables such as expectations of deference and concerns about one's social worth. However, power distance may also act as a moderator, operating in concert with other societal and cultural variables to weaken or strengthen the relationship between variables such as LS, TO, SC, and different manifestations of violence and aggression. Future research should explore the precise routes through which power distance contributes to regional variations in violence and aggression.

In sum, we applaud the authors for putting ecology at the forefront of research on violence and aggression. Their approach ties in with a growing body of research (see Oishi, 2014, for a review) showing that economic (e.g., farming/herding: Uskul & Over, 2014), political (e.g., voice/accountability: Helliwell & Huang, 2008), environmental (e.g., green spaces: Kaplan & Berman 2010), and demographic variables (e.g., sex ratio: Pollet & Nettle, 2009) impact behaviour. However, an ecological approach to human behaviour is inherently intertwined with societal and cultural factors, which, in our view, need to be considered when seeking to explain regional and climatological variations in violence and aggression.

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